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Orion; a portable transit for determining time, and a seismometer for observing earthquakes. Next year a 12-inch visual telescope will be added to this phenomenal equipment, so that there can be no failure on the ground of lack of instruments.

"There is no wood in the country where the expedition is going, and therefore, a great many things not at all astronomical—a dwelling-house, for example—have to be taken along. The steamer which takes the party will have in her hold even the domes and the iron piers for the telescopes.

"The observatory at Wilson's Peak has been temporarily abandoned."

SPECTROSCOPIC INVESTIGATIONS AT THE JOHNS HOPKINS UNIVERSITY [BY PROFESSOR H. A. ROWLAND].

"The visible and ultra violet solar spectrum has been compared with the spectra of different metals and the position of the metallic lines marked on the spectrum map with the view to identifying as many as possible of the more important lines of the solar spectrum. In this way the spectra of all known metals, with one or two exceptions, have been photographed and compared with that of the sun and its presence or absence in the sun determined. Silicon has thus been found in the sun for the first time. Many important solar lines have also been found to be due to vanadium and scandium. The presence of silver has also been definitely determined. Photographic studies have also been made of the spectra of various chemical preparations of minerals containing rare earths, with the view of isolating the spectra of the various components. This research is yet very incomplete.

"The homologous lines in the spectra of zinc and cadmium have been carefully compared. The so-called 'second spectrum of hydrogen' has been photographed in connection with the sun, and the wave lengths determined, and the spectrum of nitrogen has been photographed and studied in the same way. The various formulæ for the arrangement of lines in band spectra have been tested by means of more accurately determined wave lengths. Investigations have also been made of the effect of heat in modifying the magnetism of iron bars, of the cause of the enormous apparent values of the specific inductive capacity of amyl alcohol and certain other imperfectly insulating liquids. A large number of diffraction gratings have been ruled on the dividing engines for the use of investigators throughout the world. A series of photographic spectra of the metals from wave

length 2000 to w. l. 6000 has been obtained, and eye observations made on many of them to the limit of the red rays. These are in conjunction with the solar spectrum, and the original negatives are on about the scale of ANGSTRÖM's map. The negatives are each nineteen inches long. A micrometer has been constructed measuring wave lengths direct to $\frac{1}{80000}$ part. "During the year there have been eighty-one students in the department of Physics, twenty of whom were graduates."

—From the Annual Report of the President of the
Johns Hopkins University (1890).

RECENT IMPORTANT PUBLICATIONS.

MISS AGNES M. CLERKE: *The System of the Stars*; pp. 424, six plates and many wood cuts.

DR. J. L. E. DREYER: *TYCHO BRAHE*—a picture of scientific life and work in the XVI century; pp. 405, five plates and several cuts.

H. H. TURNER and A. A. COMMON: *The Companion to the Observatory for 1891*. (See *Publications A. S. P.*, vol. II, p. 26).

W. T. LYNN: *Celestial Motions*—a handy book of Astronomy. Sixth edition.

ARTHUR COTTAM: *Charts of the Constellations*. (Probably the edition in book-form, 12x15 inches, will be found most generally useful to amateurs).

E. W. MAUNDER (Editor): *The Journal of the British Astronomical Association* (monthly). (Vol. I begins with October, 1890).

J. SCHEINER: *Die Spectralanalyse der Gestirne*; pp. 474, two plates, seventy-four cuts.

R. VON KÖVESLIGETHY: *Grundzüge einer theoretischen Spectralanalyse*; pp. 327, plates.

C. E. DUTTON: *The Charleston Earthquake of 1886*; pp. 185, and many cuts.

A HURRICANE IN AN OBSERVATORY AND WHAT IT DID THERE!

[Extract from *Madras Observations*, vol. 4, 1836-37 by T. G. TAYLOR, pp. 2-3.]*

—"These numbers hold good up to the 30th October, 1836, when the wires were broken—in consequence of the shutters on the roof of the observatory being blown open by the violence of the wind, whereby the instrument was exposed for some minutes to very heavy rain,—having failed during this time to secure the shutter.

* * * * I was compelled to take the transit off its axis, and

* This extract was kindly copied for us by WM. C. WINLOCK, Esq., of the Smithsonian Institution. E. S. H.